

What is claimed is:

1. A method for emulating an angiogram from three-dimensional image data, the method comprising:

5 loading three-dimensional image data representing at least a portion of a body;  
segmenting at least a portion of the blood vessel data from the three-dimensional data to create segmented blood vessel data and non-segmented data;

maintaining a first set of values for a rendering characteristic and a second set of values for the rendering characteristic; and

10 rendering the non-segmented data using the first set of values for the rendering characteristic and rendering the segmented blood vessel data using the second set of values for the rendering characteristic.

2. The method of claim 1, wherein the rendering characteristic is color, wherein the first  
15 set of values comprises a first color table and the second set of values comprises a second color table.

3. The method of claim 2, wherein the first color table and is a monochrome color table  
20 such that the non-segmented data is rendered as shades of white on a black background.

4. The method of claim 2, wherein the first color table and is a monochrome color table  
such that the non-segmented data is rendered as shades of black on a white background.

5. The method of claim 2, wherein the first color table is a monochrome color table and  
25 the second color table includes a plurality of colors.

6. The method of claim 2, wherein the first color table includes a plurality of first colors  
and the second color table includes a plurality of second colors wherein the first colors are  
different from the second colors.

7. The method of claim 1, further comprising inverting the first set of values to form the second set of values.
- 5 8. The method of claim 2, further comprising rendering the non-segmented data using a first transparency value and rendering the segmented blood vessel data using a second transparency value.
9. The method of claim 8, wherein the first transparency value is more than  
10 approximately fifty percent greater than the second transparency value.
10. The method of claim 8, wherein the first transparency value is approximately 80 percent and the second transparency value is approximately 30 percent.
- 15 11. The method of claim 8, wherein the second color table includes a plurality of colors, the first transparency value is approximately 90 percent, and the second transparency value is approximately 30 percent.
12. The method of claim 1, further comprising setting a view.  
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13. The method of claim 12, wherein the view is a perspective view.
14. The method of claim 12, wherein the view is an orthographic view.
- 25 15. The method of claim 14, wherein the view is selected from the group consisting of: Right Anterior Oblique (RAO), Left Anterior Oblique (LAO), and Left Anterior Oblique with Cranial Angulation (LAO-CRA).

16. The method of claim 1, wherein the three-dimensional image data comprises a series of three-dimensional image data sets and further comprising providing an animated view of the segmented blood vessel data and non-segmented blood vessel data.

17. The method of claim 16, wherein providing an animated view of the segmented blood vessel data and non-segmented blood vessel data comprises repeating the segmenting task and rendering task for each image data set in at least a subset of the series of three-dimensional image data sets:

18. An image processing system comprising:  
a processor;  
a memory coupled to the processor; and  
a graphics subsystem coupled to the processor;  
wherein the processor is operable to:

load three-dimensional image data representing at least a portion of a body;  
segment at least a portion of the blood vessel data from the three-dimensional data to create segmented blood vessel data and non-segmented data;  
maintain a first set of values for a rendering characteristic and a second set of values for the rendering characteristic; and  
cause the graphics subsystem to render the non-segmented data using the first set of values for the rendering characteristic and render the segmented blood vessel data using the second set of values for the rendering characteristic.

19. The image processing system of claim 18, wherein the rendering characteristic is color, wherein the first set of values comprises a first color table and the second set of values comprises a second color table.

20. The image processing system of claim 19, wherein the first color table and is a monochrome color table such that the non-segmented data is rendered as shades of white on a black background.

5 21. The image processing system of claim 19, wherein the first color table and is a monochrome color table such that the non-segmented data is rendered as shades of black on a white background.

22. The image processing system of claim 19, wherein the first color table is a  
10 monochrome color table and the second color table includes a plurality of colors.

23. The image processing system of claim 19, wherein the first color table includes a plurality of first colors and the second color table includes a plurality of second colors wherein the first colors are different from the second colors.

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24. The image processing system of claim 18, further comprising inverting the first set of values to form the second set of values.

25. The image processing system of claim 19, further wherein the processor is further  
20 operable to render the non-segmented data using a first transparency value and render the segmented blood vessel data using a second transparency value.

26. The image processing system of claim 25, wherein the first transparency value is more than approximately fifty percent greater than the second transparency value.

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27. The image processing system of claim 25, wherein the first transparency value is approximately 80 percent and the second transparency value is approximately 30 percent.

28. The image processing system of claim 25, wherein the second color table includes a plurality of colors, the first transparency value is approximately 90 percent, and the second transparency value is approximately 30 percent.

5 29. A graphics subsystem comprising:

a graphics processor; and

a memory coupled to the graphics processor;

wherein the graphics processor is operable to:

receive a selection of blood vessel data from three-dimensional data

10 segment the selected blood vessel data to create segmented blood vessel data and non-segmented data;

receive a first set of values for a rendering characteristic and a second set of values for the rendering characteristic; and

15 render the non-segmented data using the first set of values for the rendering characteristic and render the segmented blood vessel data using the second set of values for the rendering characteristic.

30. The graphics subsystem of claim 29, wherein the rendering characteristic is color, wherein the first set of values comprises a first color table and the second set of values  
20 comprises a second color table.

31. The graphics subsystem of claim 30, wherein the first color table and is a monochrome color table such that the non-segmented data is rendered as shades of white on a black background.

25 32. The graphics subsystem of claim 30, wherein the first color table and is a monochrome color table such that the non-segmented data is rendered as shades of black on a white background.

33. The graphics subsystem of claim 30, wherein the first color table is a monochrome color table and the second color table includes a plurality of colors.

34. The graphics subsystem of claim 30, wherein the first color table includes a plurality of first colors and the second color table includes a plurality of second colors wherein the first colors are different from the second colors.

35. The graphics subsystem of claim 29, further comprising inverting the first set of values to form the second set of values.

36. The graphics subsystem of claim 30, wherein the processor is operable to render the non-segmented data using a first transparency value and render the segmented blood vessel data using a second transparency value.

37. The graphics subsystem of claim 36, wherein the first transparency value is more than approximately fifty percent greater than the second transparency value.

38. The graphics subsystem of claim 36, wherein the first transparency value is approximately 80 percent and the second transparency value is approximately 30 percent.

39. The graphics subsystem of claim 36, wherein the second color table includes a plurality of colors, the first transparency value is approximately 90 percent, and the second transparency value is approximately 30 percent.

40. A computer-readable medium having computer-executable instructions for performing a method for emulating an angiogram from three-dimensional image data, the method comprising:

loading three-dimensional image data representing at least a portion of a body;

segmenting at least a portion of the blood vessel data from the three-dimensional data to create segmented blood vessel data and non-segmented data;

maintaining a first set of values for a rendering characteristic and a second set of values for the rendering characteristic; and

5 rendering the non-segmented data using the first set of values for the rendering characteristic and rendering the segmented blood vessel data using the second set of values for the rendering characteristic.

41. The computer-readable medium of claim 40, wherein the rendering characteristic is  
10 color, wherein the first set of values comprises a first color table and the second set of values comprises a second color table.

42. The computer-readable medium of claim 41, wherein the first color table and is a  
15 monochrome color table such that the non-segmented data is rendered as shades of white on a black background.

43. The computer-readable medium of claim 41, wherein the first color table and is a  
monochrome color table such that the non-segmented data is rendered as shades of black on a  
white background.  
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44. The computer-readable medium of claim 41, wherein the first color table is a  
monochrome color table and the second color table includes a plurality of colors.

45. The computer-readable medium of claim 41, wherein the first color table includes a  
25 plurality of first colors and the second color table includes a plurality of second colors wherein the first colors are different from the second colors.

46. The computer-readable medium of claim 40, wherein the method further comprises  
inverting the first set of values to form the second set of values.

47. The computer-readable medium of claim 41, further comprising rendering the non-segmented data using a first transparency value and rendering the segmented blood vessel data using a second transparency value.

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48. The computer-readable medium of claim 47, wherein the first transparency value is more than approximately fifty percent greater than the second transparency value.

49. The computer-readable medium of claim 47, wherein the first transparency value is approximately 80 percent and the second transparency value is approximately 30 percent.

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50. The computer-readable medium of claim 47, wherein the second color table includes a plurality of colors, the first transparency value is approximately 90 percent, and the second transparency value is approximately 30 percent.

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51. The computer-readable medium of claim 40, further comprising setting a view.

52. The computer-readable medium of claim 51, wherein the view is a perspective view.

53. The computer-readable medium of claim 51, wherein the view is an orthographic view.

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54. The computer-readable medium of claim 53, wherein the view is selected from the group consisting of: Right Anterior Oblique (RAO), Left Anterior Oblique (LAO), and Left Anterior Oblique with Cranial Angulation (LAO-CRA).

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55. The computer-readable medium of claim 40, wherein the three-dimensional image data comprises a series of three-dimensional image data sets and further comprising providing an animated view of the segmented blood vessel data and non-segmented blood vessel data.



56. The computer-readable medium of claim 55, wherein providing an animated view of the segmented blood vessel data and non-segmented blood vessel data comprises repeating the segmenting task and rendering task for each image data set in at least a subset of the series of  
5 three-dimensional image data sets: